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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,036	08/22/2003	Norio Shimozone	16869N-090300US	9277

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TOWNSEND AND TOWNSEND AND CREW, LLP  
TWO EMBARCADERO CENTER  
EIGHTH FLOOR  
SAN FRANCISCO, CA 94111-3834

EXAMINER

BENGZON, GREG C

ART UNIT PAPER NUMBER

2144

DATE MAILED: 12/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.	Applicant(s)	
10/646,036	SHIMOZONO ET AL.	
Examiner	Art Unit	
Greg Bengzon	2144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### **DETAILED ACTION**

This application has been examined. Claims 1-12 are cancelled. Claims 13-22 are pending.

### ***Priority***

The effective date of the subject matter in the claims in this application is June 18, 2003.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/02/2005 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-19, 21-22 rejected under 35 U.S.C. 103(a) as being unpatentable over Lubbers et al. (US Patent 6947981) hereinafter referred to as Lubbers in view of Brewer et al. (US Patent 6876656) hereinafter referred to as Brewer.

Lubbers disclosed (re. Claim 13,21) a computer; a switch that is coupled to said computer via a network; a first storage device that is coupled to said switch via the network, said first storage device storing first data; and a second storage device that is coupled to said switch via the network (Lubbers – Figure 5 , Column 3 Lines 60-65) ; wherein said computer issues a first read request for the data stored in said first storage device; wherein when said switch receives said first read request, if said second storage device has second data that is copy data of said first data (Lubbers – Column 10 Lines 40-45) , said switch converts said first read request into a second read request for said second data (Lubbers – Column 6 Lines 50-55,Column 7 Lines 20-35), and transmits said second read request to said second storage device via the network, whereas if said second storage device does not have said second data, said switch transmits said first read request to said first storage device via the network; (Lubbers – Column 8 Lines 55-65)

However Lubbers did not disclose (re. Claim 13) wherein when receiving the data, said switch transfers the received data to said computer as said first data from said first storage device. Lubbers did not disclose said switch described in Claims 14-

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15. Lubbers did not disclose (re. Claim 21) a port unit and converter for converting commands received by port unit.

Brewer disclosed (re. Claim 13) wherein when receiving the data, said switch transfers the received data to said computer as said first data from said first storage device [aliasing] (Brewer – Column 5 Lines 10-20, Column 12 Lines 25-35). Brewer disclosed (re. Claim 14) wherein said switch has information of whether or not said second storage device has said second data, and said switch determines a destination of the read request in accordance with said information (Brewer – Column 2 Lines 40-45, Column 30 Lines 1-5); (re. Claim 15) wherein said switch transmits the read request to either said first storage device or said second storage device via the network in accordance with information related to presence of said second data (Brewer – Column 2 Lines 40-45, Column 30 Lines 1-5); (re. Claim 21) a port unit and converter for converting commands received by port unit (Brewer – Column 29 Lines 30-40)

Lubbers and Brewer are analogous art because they present concepts and practices regarding storage virtualization using storage area networks and storage switches. At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine the teachings of Brewer regarding aliasing into the method and system of Lubbers. The suggested motivation for said combination would have been, as Brewer suggests (Brewer – Column 5 Lines 35-40), to allow storage device

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and client device software to overcome limitations in the prior art (Brewer – Column 3 Lines 60-65) without requiring modifications.

Lubbers disclosed (re. Claim 16) wherein said first storage device comprises a network interface coupled to said network and a processor coupled to said network interface, said processor reading said first data in accordance with said first read request and transmitting said first data back to said switch through said network interface and said network (Lubbers – Column 6 Lines 1-10) ; (re. Claim 17) said first storage device includes a plurality of addressable storage areas for storing said first data, while said second storage device includes a plurality of addressable storage areas for storing said second data; said first read request includes a first destination address where said first data resides; (Lubbers – Column 6 Lines 1-10)

However Lubbers did not disclose (re. Claim 17) wherein if said second storage device has said second data, said switch changes said first destination address to a second destination address, where said second data resides, to be incorporated into said second read request.

Brewer disclosed wherein said switch changes said first destination address to a second destination address, where said second data resides, to be incorporated into

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said second read request [aliasing] (Brewer – Column 5 Lines 10-20, Column 12 Lines 25-35), as discussed in the rejection for Claim 13.

Lubbers disclosed (re. Claim 18) wherein: said second storage device further includes third data that is not copy data of said first data; and when said computer issues a third read request for said third data via the network, said switch receives said third read request and transmits said third read request to said second storage device via the network. (Lubbers – Column 6 Lines 1-10)

Lubbers disclosed (re. Claim 19) wherein said switch has information of whether or not said second storage device has said second data, and if said second storage device does not have said second data, said switch transfers said first data received from said first storage device to said second storage device in response to said first read request, and said switch updates said information to indicate that said second storage device has as said second data the copy data of said first data currently requested by said computer. (Lubbers – Column 12 Lines 15-25)

Claims 21-22 are rejected on the same basis as Claims 13-19.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Lubbers et al. (US Patent 6947981) hereinafter referred to as Lubbers in view of Brewer et al. (US Patent 6876656) hereinafter referred to as Brewer, further in view of Coile (US Patent 6654795).

The combination of Lubbers and Brewer disclosed (re. Claim 20) wherein when said switch has found that an amount of free storage capacity in said second storage device is not enough to store said first data to be transferred, said switch obtains an amount of storage area in said second storage device sufficient for storing said first data (Lubbers – Column 6 Lines 1-10)

However the combination of Lubbers and Brewer did not disclose (re. Claim 20) wherein said switch chooses a storage area occupied by data with the least frequency of use by said computer from among all of said second data in said second storage device.

Coile disclosed (re. Claim 20) wherein said switch chooses a storage area occupied by data with the least frequency of use by said computer from among all of said second data in said second storage device. (Coile – Column 7 Lines 15-25, Column 8 Lines 35-35)

Lubbers, Brewer and Coile are analogous art because they present concepts and practices regarding use of redundant data files across storage systems. At the time of the invention it would have been obvious to combine the teachings of Coile into the combined method and system of Lubbers and Brewer. The motivation for said



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combination would have been, as Coile suggests (Coile – Column 1 Lines 10-15), to selectively distribute access requests to data while overcoming deficiencies in prior load balancing systems (Coile – Column 2 Lines 10-15).

### ***Conclusion***

**Examiner's Note:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6957303 Fujimoto; Kazuhisa et al. - storage system and another storage system are connected to each another through a SAN switch

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US 6449688 Peters; Eric C. et al. - replication of segments allows the system to further control which storage unit is accessed by a particular application

US 20040111485 Mimatsu, Yasuyuki et al. – installs a common interface for controlling the function of a storage device in a virtualization server and a switch

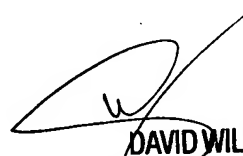
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Bengzon whose telephone number is (571) 272-3944. The examiner can normally be reached on Mon. thru Fri. 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (571)272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



gcb



DAVID WILEY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100